

REMARKS

This Amendment is submitted in response to the Non-Final Office Action mailed on April 29, 2010. Claims 1 and 8-22 are pending in the present application. Claims 1 and 8-22 are rejected in the present application. Claims 2-7 were previously canceled without prejudice or disclaimer. The Commissioner is hereby authorized to charge deposit account 02-1818 for any fees which are due and owing. If such a withdrawal is made, please indicate the Attorney Docket No. 3712174-00517 on the account statement. Applicants respectfully disagree and traverse the rejections, as set forth in detail below.

In the Office Action, Claims 1, 8-10, 12-14 and 17-19 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Publication No. 2001/0031509 A1 to Yamazaki et al. ("Yamazaki"). Independent Claims 1, 14 and 16 recite, in part, an organic EL device comprising an anode, a cathode, and an organic layer including a plurality of light emitting layers provided between the anode and the cathode, wherein said light emitting layers comprise a red light emitting layer provided on the anode, a green light emitting layer provided directly on the red light emitting layer, and a blue light emitting layer provided directly on the green light emitting layer. Similarly, independent Claim 8 recites, in part, a display comprising a color filter provided on a light take-out surface side of an organic EL device for emitting white light, wherein said organic EL device comprises an organic layer including a plurality of light emitting layers, said organic layer interposed between an anode and a cathode; and said light emitting layers comprise a red light emitting layer, a green light emitting layer, and a blue light emitting layer laminated in respective order from the anode side. Applicants respectfully maintain that Yamazaki fails to disclose or suggest each of the elements of the present claims, and provide additional arguments in support of this position below.

The main feature of the presently claimed invention is to provide a laminated structure of each color in consideration of the transportation property of the hole or the electron of each light emitting layer of an OLED. Applicants determined the OLED structure of the presently claimed invention by taking the transportation and recombination of charges into consideration, in addition to the laminating order of each layer. As such, the presently claimed invention takes more into account that just the laminating order of colors. However, in contrast to the presently claimed invention, Yamazaki fails to disclose or suggest an organic layer including a plurality of light emitting layers provided between the anode and the cathode. Moreover, Yamazaki fails

to disclose or suggest wherein said light emitting layers comprise a red light emitting layer provided on the anode, a green light emitting layer provided directly on the red light emitting layer, and a blue light emitting layer provided directly on the green light, as recited in the present claims.

In contrast to the present claims, each of the OLED structures in Yamazaki have only one recombination region, thus only one light emitting region between the anode and the cathode. For example, with regard to Fig. 3B cited in the Office Action, Yamazaki discloses that: "the emission layer 309 is a three-layered structure composed of an emission layer 309a, an emission layer 309b, and an emission layer 309c." (See, Yamazaki, [0035]). However, it is not the case that each of layers 309a, 309b, and 309c are separate light emitting layers. In this regard, "the cluster of organic substances 311 forms a hole trap region and the cluster of organic substances 312 forms an electron trap region" and "the hole injected from the anode 304 is trapped by the cluster of organic substances 311, and the electron injected from the cathode 306 is trapped by the cluster of organic substances 312." (See, Yamazaki, [0036] and [0038]). As such, the combination of layers 309a, 309b, and 309c only have one recombination region. Accordingly, the-OLED structure in Yamazaki cannot emit light in each of the laminated light emitting layers.

The Office Action cites to paragraph [0040] of Yamazaki for disclosing the lamination of colors as RGB. (See, Office Action, pg. 3). However, this paragraph does not describe laminating different colored light emitting layers (e.g., a single layer being 309a, 309b, and 309c) on top of one another between an anode and a cathode, as presently claimed. Rather, this paragraph only describes that three different structures, such as shown in Fig. 3B, can be placed next to each other in line. Specifically, Yamazaki discloses that: "in the case of emitting color lights, three kinds of emission layers for the colors R (red), G (green), and B (blue) may be formed in line in each of the pixels." (See, Yamazaki, [0040]). As such, it would seem that any color mixing would be accomplished in Yamazaki through lateral proximity of the three separate sub-pixels, rather than by vertically laminating three different light emitting layers between the same anode and cathode, as presently claimed. Therefore, the OLED produced by simply positioning RGBs in line in Yamazaki's OLED structure is different from the OLED of the presently claimed invention since the idea of transportation and recombination of charges is totally different. For at least the reasons above, Applicants respectfully submit that Yamazaki fails to disclose or suggest each of the elements of Claims 1, 8-10, 12-14 and 17-19.

Accordingly, Applicants respectfully request that the 35 U.S.C. §103(a) rejection of Claims 1, 8-10, 12-14 and 17-19 in view of Yamazaki be withdrawn.

The Office Action also rejected Claims 16 and 20-22 under 35 U.S.C. §103(a) as being unpatentable over Yamazaki in view of U.S. Pub. No. 2004/0185300 to Hatwar et al. ("Hatwar"). Regarding the Hatwar reference, only a laminating structure of two colors (Yellow/Blue) is disclosed. It is significantly easier to balance and obtain white color by laminating two colors, such as is disclosed in Hatwar. However, it is much more difficult to balance and obtain white color light by laminating three colors, as in the presently claimed invention. Especially, the light emitting layer in the middle layer of the three colors (in the embodiment, G) needs efforts, considering not only the order of colors but also the transportation and recombination of charges as in the present invention, to be emitted. Therefore, Hatwar fails to remedy the deficiencies of Yamazaki, even assuming that the references are properly combinable.

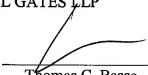
Accordingly, Applicants respectfully request that the 35 U.S.C. §103(a) rejection of Claims 16 and 20-22 over Yamazaki in view of Hatwar be withdrawn.

For the foregoing reasons, Applicants respectfully submit that the present application is in condition for allowance and earnestly solicit reconsideration of same.

Respectfully submitted,

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